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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,438	07/12/2002	Shahram Mihan	DB050575/Doe	3670
23416	7590	11/26/2003		
CONNOLLY BOVE LODGE & HUTZ, LLP				
P O BOX 2207				
WILMINGTON, DE 19899				
			EXAMINER	
			LU, C CAIXIA	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

eb 11

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/069,438	MIHAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Caixia Lu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) 18-20 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,13-17,21-26 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. The requirement is still deemed proper and has been made FINAL in the previous office action mailed on June 18, 2003. The newly added claims 28-32 drawn to the copolymer composition of the elected group, therefore, are examined together with the elected group. Currently, Claims 1, 13-17, 21-26, and 28-32 are under examination.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 13-17, 21-26, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brant et al. (WO 93/12151) and Holtcamp et al. (US 6,476,166 B1) respectively as set forth in the previous office action, Paper No. 9.

### ***Response to Arguments***

4. Applicant's arguments filed October 22, 2003 have been fully considered but they are not persuasive.

#### **Regarding the rejection over Brant under 35 USC §103**

Applicants argue that "there is just no teaching in the reference on how to raise the Mn to over 150,000 g/mol and maintain all the other claimed properties of the copolymer, and applicants further indicate that metallocene catalysts yield relatively low molecular weight copolymer as compared to Ziegler-Natta catalyst and page 3, lines 1-7 and 15-22 of Brant and Soga's highlighted section are cited for support. The examiner

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disagrees. The cited section of Brant teaches that the metallocene catalyst systems prior to patentee suffer from the drawbacks of low incorporation rates and low molecular weights. Brant's metallocene catalyst systems are the remedies for the drawbacks of those metallocene catalyst systems. Brant's metallocene catalyst systems are for "the production of higher molecular weight ethylene-longer- $\alpha$ -olefin copolymers and desirably with a narrow molecular weight distribution and a narrow composition distribution" (page 4, lines 33-37). Applicants are noted that the provided copy of Soga does not contain any high lighted section as alleged, thus, the examiner cannot response the arguments over Soga.

Applicants assert that the examiner has also not explained where Brant et al. teaches how to prepare copolymers having Mn molecular weights of above 150,000 g/mol and CDBI of above 70%. This is incorrect. In the previous office action mailed on June 18, 2003, in the last paragraph of page 2, the examiner has indicated that those teachings can be found in page 5, line 27 to page 6, line 2 and page 12, lines 35-39. Brant's patent WO 93/12151 is the equivalent of Brant's US 5,475,075, both patent share the same disclosure. A US patent has the presumption of validity. Therefore, it is presumed that, by using the process disclosed, patentees are able to produce the ethylene copolymer with the weight average molecular weight (Mw) at the high end of the range of 1,000,000 g/mol which has a corresponding number average molecular weight (Mn) of at least 250,000 g/mol (calculated from  $1,000,000/4$ ). Applicants' attentions are also directed to Claims 1, 6, and 9 of US 5,475,075 where the ethylene copolymer with the limitation encompassing the instant claims are expressly claimed.

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Applicants argue that there is no motivation in Brant to prepare copolymers having the claimed molecular weights since Brant only exemplifies copolymers of a much lower molecular weight in the working example. This is again incorrect. First of all, Brant has expressly taught the copolymer with Mw/Mn in the range of 2-4 to have a Mw up to 250,000 which is in the molecular weight range of the instant claims as shown above. Secondly, in the first paragraph of page 12, Brant expressly teaches that patentee's copolymers have surprisingly high molecular weight in the range from 30,000 to 1,000,000 depending on the desired end-use application. For example, if the end use requires the copolymer to have high mechanical strength, one would have been motivated to prepare a copolymer with a molecular weight at the high end of the molecular weight range such as as high as 1,000,000 g/mol.

Similar responses as shown above are also applied to the arguments regarding the rejections over Holtcamp et al. (US 6,476,166 B1). Furthermore, it is noted that in Holtcamp's Examples 22 and 23, hydrogen was used during the polymerization process to control molecular weights and the copolymer having higher CDBI when lower hexene concentration was used during the polymerization process by comparing Examples 22 and 23. Therefore, when the ethylene copolymer with higher molecular weight and higher CDBI are desired for its superior mechanical strength, one would have used less or eliminated hydrogen during polymerization to maximize the molecular weight and used lower hexene concentration during the polymerization process to achieve higher CNBI.

**Conclusion**


5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (703) 306-3434. The examiner can normally be reached on 9:00 a.m. to 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1193.

  
Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713  
November 24, 2003